

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

**Ex parte RAMON B. FERNANDEZ
and KENNETH A. DEVANE**

**Appeal No. 1997-0241
Application No. 08/218,892**

ON BRIEF

**Before JOHN D. SMITH, OWENS, and LIEBERMAN, Administrative Patent Judges.
LIEBERMAN, Administrative Patent Judge.**

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's refusal to allow claims 8 through 16 which are all the claims remaining in the application.

THE INVENTION

The invention is directed to a flexible yarn element having a plurality of pyrolyzed carbon filaments wherein each filament is in contact with at least one other filament. In addition, a sizing material at least partially covers the plurality of filaments. Nonetheless, the sizing material of each filament is substantially separated from the sizing material of at least one other filament in contact with it.

THE CLAIM¹

Claim 8 is illustrative of appellants' invention and is reproduced below.

8. A flexible yarn element comprising:

a plurality of pyrolyzed carbon filaments wherein each said filament is in contact with at least one other said filament;

a sizing material at least partially coating said plurality of filaments;

wherein said sizing material of each said filament is substantially separated from the sizing material of said at least one other said filament in contact therewith.

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references.

Weldy	3,914,504	Oct. 21, 1975
Edelman et al. (Edelman)	4,364,993	Dec. 21, 1982
Miller et al. (Miller)	5,369,146	Nov. 29, 1994 (filed Sep. 28, 1993)

THE REJECTIONS

¹ The examiner states in the advisory action mailed on December 12, 1995 (paper no. 12) that the amendment filed by appellant on November 24, 1995 (paper no. 11) will not be entered. The appendix to appellant's brief does not include the changes to the claims made in this amendment, and appellant and the examiner present their arguments as if this amendment were not entered. However, the amendment has been clerically entered. In the event of further prosecution, the examiner should resolve the discrepancy between the advisory action and the entry of the amendment.

Claims 8 through 16 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

Claims 8 through 16 stand rejected under 35 U.S.C. § 103 as being unpatentable over Edelman, Weldy or Miller.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with the appellants that the aforementioned rejections under 35 U.S.C. § 103 and 35 U.S.C. § 112 are not well founded. Accordingly, we will not sustain either of the rejections.

The Rejection under Section 112 -- Indefiniteness

The legal standard for definiteness under the second paragraph of 35 U.S.C. § 112 is whether a claim reasonably apprises those of ordinary skill in the art of its scope. See *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). The inquiry is to determine whether the claim sets out and circumscribes a particular area with a reasonable degree of precision and particularity. The definiteness of the language employed in a claim must be analyzed not in a vacuum, but in light of the teachings of the particular application. See *In re Moore*, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971).

It is the examiner's position that, "it is not clear as to how the filaments can be in contact with each other, yet be separated," as required by the claimed subject matter. See Answer, page 3. Hence, the claims are indefinite.

Yet, as stated in the specification, the carbon yarn product is flexed after pre-carbonizing to break the fiber-to-fiber bonds between the yarn filaments. See specification, page 1, lines 7-9, and page 2, lines 21-24. Moreover, as explained in the specification, the present invention employs conventionally sized, raw, non-carbonized, non-scoured yarn and subjects the yarn to a precarbonization process by exposing the yarn to elevated temperatures sufficient to cause bonding of the sizing material. See specification, page 4, lines 9-12. Thereafter, the yarn is subjected to mechanical working kneading or flexing which mechanically

separates and breaks the bonds between the sizing of adjacent filaments. See specification, page 4, lines 22-25.

On this record, we conclude that the specification provides a reasonable standard for understanding the metes and bounds of the phrases, "in contact with at least one other said filament," and "substantially separated from the sizing material of said at least one other said filament," when the claim is read in light of the specification. See **Seattle Box Co. v. Industrial Crating & Packing, Inc.**, 731 F.2d 818, 826, 221 USPQ 568, 573-574 (Fed. Cir. 1984). Accordingly, we reverse the rejection of the examiner.

The Rejection under Section 103 -- Obviousness

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a **prima facie** case of unpatentability." See **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). In the case before us, the examiner relies upon three references, in the alternative, to reject the claimed subject matter and establish a **prima facie** case of obviousness. The basic premise of the rejection is that each of the references teaches coating a flexible yarn of carbon fiber containing a plurality of carbon filaments with a sizing

material. See Answer, page 4. As stated in the Answer, "[i]t is the examiner's position that it would have required no more than routine experimentation to choose and determine the specific sizing agent commensurate with the desired properties of the end product." See Answer, pages 4 and 5. We disagree.

Edelman is directed to carbon fibers coated with a sizing agent. See Edelman, Abstract, column 1, line 67 - column 2, line 2, and column 2, lines 30-32. The sizing agent is applied after the thermal treatment. See column 6, lines 4-7 and Example 2.

Weldy discloses carbon fibers coated with a sizing composition. See Abstract, and column 1, lines 45-47. Indeed, Weldy states that the size composition does not detract from the adhesion between the carbon fibers and the resin matrix.

Miller likewise discloses a sizing formulation adapted for use with carbon fibers. See Abstract, and column 2, lines 60-63. Miller discusses at length removal of the sizing.

However, although the carbon filament yarns of each of the references of record contain sizing agents, there is no teaching or suggestion that the carbon filament yarns meet the conditions of the claimed subject matter, which require both "a sizing material at least partially coating said plurality of filaments," and "wherein said sizing material of each said filament is substantially separated from the sizing material of said at least one other said filament."

Furthermore, the examiner has provided no evidence in support of his contention that the choice of a specific sizing agent would result in a composition meeting the requirements of the claimed subject matter.

Based upon the above analysis, we have determined that the examiner's legal conclusion of obviousness is not supported by the facts. "Where the legal conclusion [of obviousness] is not supported by the facts, it cannot stand." See *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

DECISION

The rejection of claims 8 through 16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention is reversed.

The rejection of claims 8 through 16 under 35 U.S.C. § 103 as being unpatentable over Edelman, Weldy or Miller is reversed.

The decision of the examiner is reversed.

REVERSED

JOHN D. SMITH
Administrative Patent Judge

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TERRY J. OWENS) APPEALS
Administrative Patent Judge

PAUL LIEBERMAN)
Administrative Patent Judge

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